

Joshua N. Cooper

Department of Mathematics
LeConte College
1523 Greene Street, Room 314D
University of South Carolina
Columbia, SC 29208, USA

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Consulting Faculty Member of USC Jewish Studies Program
<http://www.cas.sc.edu/jstp/>

Areas of Interest: *Quasirandomness, Discrepancy, Discrete Geometry, Universal Cycles, Combinatorial Number Theory, Coding Theory, Extremal Graphs and Permutations.*

Education

Ph.D. Mathematics, University of California, San Diego. *Jun. 2003*
Thesis Title: Quasirandom Permutations.
Advisors: Professors Fan Chung and Ronald L. Graham.

B.S. Mathematics (GPA 5.0/5.0), MIT, Cambridge, MA. *Dec. 1998*

High School Diploma, Mass. Acad. of Math. and Sci., Worcester, MA. *May 1995*

Publications

31. J. N. Cooper, J. Lenz, T. D. LeSaulnier, P. S. Wenger, D. B. West, Uniquely C_4 -Saturated Graphs, in preparation.
30. T. Carroll, J. N. Cooper, High Convolution-Powers of a Discrete Uniform Distribution, in preparation.
29. J. N. Cooper, C. Heitsch, Generalized Fibonacci Recurrences and the Discrepancy of the Lex-Least De Bruijn Sequence, in preparation.
28. J. N. Cooper, L. Lu, Where do Power Laws Come From?, in revision.
27. F. Chung and J. N. Cooper, De Bruijn Codes for Rooted Hypergraphs, in revision.
26. J. N. Cooper, Erdős-Hajnal Sets and Semigroup Decompositions, in revision.
25. J. N. Cooper, C. Poirel, Note on the Pythagorean Triple System, in revision.
24. T. Carroll, J. N. Cooper, P. Tetali, Counting Antichains and Linear Extensions in Generalizations of the Boolean Lattice, submitted.

23. J. N. Cooper, R. Ellis, Linearly Bounded Liars, Adaptive Covering Codes, and Deterministic Random Walks, submitted.
22. J. N. Cooper, Deducing Vertex Weights from Empirical Occupation Times, submitted.
21. J. N. Cooper, A. Petrarca, Symmetric and Asymptotically Symmetric Permutations, submitted.
20. J. N. Cooper, Collinear Triple Hypergraphs and the Finite Plane Kakeya Problem, submitted.
19. J. N. Cooper, M. Walters, Iterated Point-Line Configurations Grow Doubly-Exponentially, *Discrete & Computational Geometry*, to appear.
18. J. N. Cooper, S. Fenner, S. Purewal, Monochromatic Boxes in Colored Grids, *SIAM Journal of Discrete Mathematics*, to appear.
17. J. N. Cooper, B. Doerr, T. Friedrich, J. Spencer, Deterministic Random Walks on Regular Trees, *Random Structures & Algorithms*, to appear.
16. J. N. Cooper, C. Heitsch, The Discrepancy of the Lex-Least de Bruijn Sequence, *Discrete Mathematics* **310** (2009), no. 6–7, 1152–1159.
15. J. N. Cooper, B. Doerr, T. Friedrich, J. Spencer, Deterministic Random Walks on Regular Trees, in S. Teng (Ed.), Proceedings of the ACM-SIAM Symposium on Discrete Algorithms (SODA 2008), San Francisco, USA, 766–772.
14. J. N. Cooper, B. Doerr, T. Friedrich, J. Spencer, Deterministic Random Walks on Regular Trees (extended abstract), *Electronic Notes in Discrete Mathematics* **29** (2007), 509–513.
13. J. N. Cooper, B. Doerr, J. Spencer, G. Tardos, Deterministic Random Walks on the Integers, *European Journal of Combinatorics*, **28** (2007), no. 8, 2072–2090.
12. J. N. Cooper, D. Eichhorn, K. O’Byrant, Reciprocals of Binary Power Series, *International Journal of Number Theory*, **2** (2006), no. 4, 499–522.
11. J. N. Cooper, B. Doerr, J. Spencer, G. Tardos, Deterministic Random Walks, *Proceedings of the Workshop on Analytic Algorithmics and Combinatorics (ANALCO 2006)*, 185–197, Philadelphia, PA, SIAM 2006.
10. J. N. Cooper, A Permutation Regularity Lemma, *Electronic J. Comb.* **13** (2006), #R22.
9. J. N. Cooper and J. Spencer, Simulating a Random Walk with Constant Error, *Combinatorics, Probability, and Computing*, **15** (2006), no. 06, 815–822.
8. J. N. Cooper, Continued Fractions with Partial Quotients Bounded in Average, *Fibonacci Quarterly* **44** (2006), no. 4, 297–301.
7. J. N. Cooper, B. Doerr, J. Spencer, G. Tardos, Deterministic Random Walks on the Integers, in S. Felsner (Ed.), European Conference on Combinatorics, Graph Theory and Applications (EuroComb) 2005, volume AE of Discrete Mathematics & Theoretical Computer Science, pages 73–76.

6. J. N. Cooper and J. Solymosi, Collinear Points in Permutations, *Ann. Comb.* **9** (2005), no. 2, 169–175.
5. J. N. Cooper, Quasirandom Arithmetic Permutations, *Journal of Number Theory* **114** (2005), no. 1, 153–169.
4. J. N. Cooper and R. L. Graham, Generalized de Bruijn Cycles, *Annals of Combinatorics* **8** (2004), no. 1, 13–25.
3. F. Chung and J. N. Cooper, De Bruijn Cycles for Covering Codes, *Random Structures and Algorithms* **25** (2004), no. 4, 421–431.
2. J. N. Cooper, Quasirandom Permutations, *Journal of Combinatorial Theory, Series A* **106** (2004), no. 1, 123–143.
1. J. N. Cooper, R. B. Ellis, A. B. Kahng, Asymmetric Binary Covering Codes, *Journal of Combinatorial Theory, Series A* **100** (2002), no. 2, 232–249.

Employment

Palmetto Assistant Professor Department of Mathematics, University of South Carolina.	<i>Aug. 2006 – Present</i>
Post-doctoral Researcher Department of Mathematics, UCSD.	<i>Apr. 2006 – Aug. 2006</i>
Senior Scientist Combinatorial Structures and Algorithms Group, ETH-Zürich.	<i>Sep. 2005 – Mar. 2006</i>
Instructor Quasirandomness and Regularity, ETH-Zürich.	<i>Oct. 2005 – Dec. 2005</i>
Instructor, Vector Analysis Courant Institute of Mathematical Sciences, NYU.	<i>Jun. 2005 – Aug. 2005</i>
Instructor, Calculus I Courant Institute of Mathematical Sciences, NYU.	<i>Oct. 2004 – Dec. 2004</i>
NSF Mathematical Sciences Post-Doc. Research Fellow Courant Institute of Mathematical Sciences, NYU. <i>Sponsor:</i> Professor Joel Spencer.	<i>Sep. 2003 – Aug. 2005</i>
Consultant Microsoft Research (Theory Group), Redmond, WA.	<i>Sep. 2003 – Dec. 2003</i>
Research Associate University of Washington, Seattle, WA.	<i>Sep. 2003 – Dec. 2003</i>

Research Assistant *Jun. 2003 – Sep. 2003*
University of California, San Diego.
Supervisor: Professor Ronald L. Graham.

Teaching Assistant *Sep. 1999 – Jun. 2003*
University of California, San Diego.
Instructor for sections in courses including Linear Algebra, Introductory Calculus, Multivariable Calculus, Algorithms, Cryptography, Financial Mathematics. Also served as grader, tutor, and occasional lecturer.

Research Assistant *Jun. 2002 – Sep. 2002*
University of California, San Diego.
Supervisor: Professor Ronald L. Graham.

Research Assistant *Jun. 2001 – Sep. 2001*
University of California, San Diego.
Supervisor: Professor Fan Chung Graham.

Researcher/Programmer *Jun. 2000 – Sep. 2000*
DTAI, Inc. (now Kratos Defense & Security Solutions), San Diego, CA.
Application of computational geometry to spatiotemporal data storage/query, interfacing in-house software with open source code, evaluating applications of constraint logic programming to geospatial data systems. Programming in Java, XIS, PROLOG.

Quality Assurance Programmer *Jun. 1999 – Sep. 1999*
Curl Corporation, Cambridge, MA.
Quality Assurance testing of Curl language and development environment. Programming in Curl, C++.

Webmaster/Software Developer/Graphics Designer *July 1996 – Sep. 1998*
Sanjeonics, Inc, South Boston, MA.
Website design/management, development of software for small business valuation and credit reporting, systems administration. Programming in TurboPascal, C++, HTML, Perl, Java, 80x86 Assembly.

Teacher *Mar. 1996 – May. 1998*
Combinatorics, MIT High School Studies Program (HSSP), Cambridge, MA.
Teaching basic combinatorics to high school students in ten weekly classes each Spring. Course development and student evaluation.

Conferences/Workshops Attended

Palmetto Number Theory Series XI *Dec. 2009*
University of South Carolina, Columbia, SC.

24th Mini-Conference on Discrete Mathematics and Algorithms *Oct. 2009*
Clemson University, Clemson, SC.

Research Experience for Graduate Students University of Illinois, Urbana-Champaign, Urbana, IL.	<i>July 2009</i>
CanADAM 2009 Centre de Recherches Mathématiques, Montréal, Quebec, Canada.	<i>May 2009</i>
SERMON 2009 University of North Carolina, Greensboro, Greensboro, NC.	<i>Apr 2009</i>
SIAM-SEAS 2009 Conference University of South Carolina, Columbia, SC.	<i>Apr. 2009</i>
Ulam Centennial Conference University of Florida, Gainesville, FL.	<i>Mar. 2009</i>
AMS-MAA Joint Mathematics Meeting #1046 Washington, DC.	<i>Jan. 2009</i>
23th Mini-Conference on Discrete Mathematics and Algorithms Clemson University, Clemson, SC.	<i>Oct. 2008</i>
AMS Southeastern Section Meeting #1044 University of Alabama, Huntsville, AL.	<i>Oct. 2008</i>
SIAM Conference on Discrete Mathematics University of Vermont, Burlington, VT.	<i>June 2008</i>
Int. Conf. on Interdisciplinary Math. & Stat. Techniques University of Memphis, Memphis, TN.	<i>May 2008</i>
New Directions in Algorithms, Combinatorics, and Optimization Georgia Tech, Atlanta, GA.	<i>May 2008</i>
MAA Southeastern Sectional Meeting The Citadel, Charleston, NC.	<i>Mar. 2008</i>
SAMSI CDI Workshop: Cyber-enabled Discovery and Innovation Radisson RTP, Research Triangle Park, NC.	<i>Nov. 2007</i>
22th Mini-Conference on Discrete Mathematics and Algorithms Clemson University, Clemson, SC.	<i>Oct. 2007</i>
Mini-Conference on Applied Combinatorics University of South Carolina, Columbia, SC.	<i>Oct. 2007</i>
2007 AMS Fall Central Section Meeting DePaul University, Chicago, IL.	<i>Oct. 2007</i>

- First Joint International Meeting of the AMS and PTM** *July-Aug. 2007*
University of Warsaw, Warsaw, Poland.
- Random Combinatorial Structures Conference** *Apr. 2007*
University of Nebraska, Lincoln, NE.
- 2007 AMS Spring Southeastern Section Meeting** *Mar. 2007*
Davidson College, Davidson, NC.
- Workshop on Complex Networks and their Applications** *Jan. 2007*
Georgia Institute of Technology, Atlanta, GA.
- 2006 AMS Fall Southeastern Section Meeting** *Nov. 2006*
University of Arkansas, Fayetteville, AR.
- DIMACS/DIMATIA/Renyi Combinatorial Challenges Meeting** *Apr. 2006*
Rutgers/DIMACS, Piscataway, NJ.
- Conference on Probabilistic Combinatorics & Algorithms:
A Conference in Honor of Joel Spencer's 60th Birthday** *Apr. 2006*
Rutgers/DIMACS, Piscataway, NJ.
- Workshop on Analytic Algorithmics & Combinatorics (ANALCO06)** *Jan. 2006*
Radisson Hotel Miami Downtown, Miami, FL.
- Combinatorial and Additive Number Theory 2005** *May 2005*
City University of New York, New York, NY.
- AMS 2005 Spring Eastern Section Meeting** *Apr. 2005*
University of Delaware, Newark, Delaware.
- Learn & Workshop: Random Graphs and Probabilistic Methods** *Mar. 2005*
Humboldt-Universität, Berlin, Germany.
- DOCCOURSE: Modern Ramsey Theory** *Feb. 2005*
Prague, Czech Republic.
- 2005 Annual AMS/MAA Joint Mathematics Conference** *Jan. 2005*
Atlanta, GA.
- Generalizations of de Bruijn Cycles and Gray Codes** *Dec. 2004*
BIRS, Banff, Alberta, Canada.
- DIMACS/DIMATIA/Rényi Working Group on Extremal Combinatorics II** *Oct. 2004*
Rutgers/DIMACS, Piscataway, NJ.
- Graph Drawing 2004** *Oct. 2004*

CCNY, New York, NY.

Mini-Workshop on Harmonic Analysis of Boolean Functions *Sep. 2004*
Yale University, New Haven, CT.

SIAM Conference on Discrete Mathematics *Jun. 2004*
Loews Vanderbilt Plaza Hotel, Nashville, TN.

**NSF/CBMS Regional Research Conference in Mathematical Sciences on The
Combinatorics of Large Sparse Graphs** *Jun. 2004*
Cal State San Marcos, San Marcos, CA.

Combinatorial and Additive Number Theory 2004 *May 2004*
CUNY Graduate Center, New York, NY.

2004 CombinaTexas *Apr. 2004*
Texas A&M, College Station, TX.

2003 West Coast Number Theory Conference *Dec. 2003*
Asilomar Conference Center, Monterey, CA.

Integers 2003 Conference *Nov. 2003*
State University of West Georgia, Carrollton, GA.

Introductory Workshop in Discrete and Computational Geometry *Aug. 2003*
MSRI, Berkeley, CA.

2003 Annual AMS/MAA Joint Mathematics Conference *Jan. 2003*
Baltimore Convention Center, Baltimore, MD.

West Coast Number Theory Conference *Dec. 2002*
San Francisco State University, San Francisco, CA.

DIMACS Workshop on Geometric Graph Theory *Oct. 2002*
Rutgers University, Piscataway, NJ.

SIAM Conference on Discrete Mathematics *Aug. 2002*
Handlery Hotel & Resort, San Diego, CA.

**NSF/CBMS Regional Research Conference in Mathematical Sciences on Geo-
metric Graph Theory** *May 2002*
University of North Texas, Denton, TX.

2002 Annual AMS/MAA Joint Mathematics Conference *Jan. 2002*
San Diego Convention Center, San Diego, CA.

42nd Annual Symposium on Foundations of Computer Science *Oct. 2001*
Tropicana Hotel, Las Vegas, NV.

26th Annual Combinatorics, Graph Theory, and Computing
Florida Atlantic University, Boca Raton, FL.

Mar. 1995

25th Annual Combinatorics, Graph Theory, and Computing
Florida Atlantic University, Boca Raton, FL.

Mar. 1994

Activities and Honors

- Guest Editor of Special Issue Dedicated to Ron Graham of the Journal of Combinatorics, 2010.
- University of South Carolina Distinguished Undergraduate Research Mentor 2009.
- Carolina Scholar Mentor for 2008-09 and 2009-10.
- Co-organizer of Probabilistic and Extremal Combinatorics mini-symposium at SIAM-SEAS 2009.
- Mentor for Magellan Scholar Chris Poirel, awarded First Prize at poster session at USC Discovery Day '08.
- Mentor for Magellan Scholars Bill Kay and Andrew Mamroth (Spring '09)
- Invitation as Plenary Speaker at “Random Combinatorial Structures” conference, University of Nebraska, Lincoln, 4/07.
- Member of the Industrial Mathematics Institute IMI-USC (since 9/06).
- IMI Executive Committee (9/07-12/08), USC Math Web Committee (9/06-Present), USC Math Undergraduate Advisor (9/06-Present), USC Math Hiring Committee (9/07-5/08), USC Math Qualifying Exam Committee (9/07-5/08), USC Math Undergraduate Advisory Council (9/08-Present), USC Faculty Senator (9/08-Present), USC Event Planning Committee (9/08-Present).
- Co-organizer of the “Extremal and Probabilistic Combinatorics” AMS Special Session at the 2006 Fall Southeastern Section Meeting, Fayetteville, AR, November 3-4, 2006.
- Co-organizer of the “Probabilistic Paradigms in Combinatorics” AMS Special Session at the 2005 Spring Eastern Section Meeting, Newark, DE, April 2-3, 2005.
- Two months invited visit to the Rényi Institute, Budapest, Feb. 2005 - Mar. 2005.
- Second-place winner (with Reid Andersen and Robert Ellis) of Graph Drawing Contest at the 2004 Graph Drawing Conference in New York, NY.
- Recipient of National Science Foundation (NSF) Mathematical Sciences Postdoctoral Research Fellowship (MSPRF) 2003-2006 to study at New York University (NYU) with Professor Joel Spencer.
- Graduate Assistance in Areas of National Need (GAANN) Fellow, 2001.

- Co-organizer of the Combinatorial Structures from Discrete Geometry Mini-Symposium at the August 2002 SIAM Conference on Discrete Mathematics, San Diego, CA.
- Referee for Elec. J. of Comb., Comp. Geom.: Theory and Appl., J. Comb. Theory Series A, SIAM J. on Comp., SIAM J. on Disc. Math., J. of Integer Sequences, Math. Research Letters, Ars Combinatoria, Combinatorica, J. Design Theory, Discrete Math.
- Invited Representative for Graduate Students to January 2002 Mathematical Association of America Board of Governors Meeting, San Diego, CA.
- Administrator of MathStorm, a student-run mathematics consulting service for researchers at UCSD.
- Recipient of National Merit Scholarship Award, 1995.

Presentations

- | | |
|---|-----------------|
| Tree Reconstruction and a Waring-Type Problem on Partitions
PANTS XI, Columbia, SC. | <i>Dec 2009</i> |
| How to Choose a Random Sudoku Board
PME/GMC 3rd Annual Sudoku Championship, Columbia, SC. | <i>Nov 2009</i> |
| Linearly Bounded Liars, Adaptive Covering Codes, and Deterministic Random Walks
USC Combinatorics Seminar, Columbia, SC. | <i>Sep 2009</i> |
| The Discrepancy of the Lexicographically Least de Bruijn Cycle
SERMON 2009, Greensboro, NC. | <i>Apr 2009</i> |
| Liar Games, Optimal Codes, and Deterministic Simulation of Random Walks
<i>May 2009</i>
Georgia Tech Combinatorics Seminar, Atlanta, GA. | |
| Roto-Router Analysis of the Liar Game
SIAM-SEAS 2009, Columbia, SC. | <i>Apr 2009</i> |
| Roto-Router Analysis of the Liar Game
Ulam Centennial Conference, Gainesville, FL. | <i>Mar 2009</i> |
| The Discrepancy of the Lexicographically Least de Bruijn Cycle
USC Combinatorics Seminar, Columbia, SC. | <i>Feb 2009</i> |
| The Mathematics of Sudoku
USC Gamecock Math Club/IIME 2008 Sudoku Contest, Columbia, SC. | <i>Nov 2008</i> |
| Monochromatic Boxes in Colored Grids
2008 Fall AMS Southeastern Section Meeting, Huntsville, AL. | <i>Oct 2008</i> |

- Monochromatic Boxes in Colored Grids** *Oct 2008*
The 23rd Clemson Mini-Conference, Clemson, SC.
- Pythagorean Partition-Regularity and Triple Systems with the Sum Property** *Sep 2008*
USC Combinatorics Seminar, Columbia, SC.
- Triple Systems with the Sum Property** *Jul 2008*
ETSU-REU Seminar, Johnson City, TN.
- Learning Vertex Weights from Sample Mean Occupation Times** *May 2008*
Int. Conf. on Interdisciplinary Mathematical & Statistical Techniques, Memphis, TN.
- Symmetric and Asymptotically Symmetric Permutations II** *Mar. 2008*
USC Combinatorics Seminar, Columbia, SC.
- Symmetric and Asymptotically Symmetric Permutations I** *Mar. 2008*
USC Combinatorics Seminar, Columbia, SC.
- Ladner's Theorem** *Feb. 2008*
USC Algebra & Logic Seminar, Columbia, SC.
- Klee's Measure Problem, Multiobjective Optimization, and Monotone Boolean Functions** *Feb. 2008*
USC Combinatorics Seminar, Columbia, SC.
- Discrete Stochastic Differentiation** *Oct. 2007*
Mini-Conference on Applied Combinatorics, Columbia, SC.
- Discrete Stochastic Differentiation** *Oct. 2007*
2007 AMS Fall Central Section Meeting, Chicago, IL.
- Discrete Stochastic Differentiation** *Sep. 2007*
USC Combinatorics Seminar, Columbia, SC.
- Discrete Stochastic Differentiation** *July 2007*
First Joint International Meeting of the AMS and PTM, Warsaw, Poland.
- Deterministic Random Walks: Recent Developments** *Apr. 2007*
Random Combinatorial Structures Conference, Lincoln, NE.
- Where do power laws come from?** *Apr. 2007*
Georgia Tech Seminar, Atlanta, GA.
- Finite Plane Kakeya Problem & Collinear Points in Permutations** *Apr. 2007*
Georgia Tech Combinatorics Seminar, Atlanta, GA.
- Deterministic Random Walks** *Mar. 2007*

Howard University Mathematics Department Colloquium, Washington, DC.

Quasirandom Permutations *Mar. 2007*
IIT Mathematics Department Colloquium, Chicago, IL.

Random Linear Extensions of Grids *Mar. 2007*
IIT Combinatorics Seminar, Chicago, IL.

Finite Field Kakeya Problem and Collinear Triples in Permutations *Mar. 2007*
2007 AMS Spring Southeastern Section Meeting, Davidson, NC.

Where Do Power Laws Come From? *Mar. 2007*
2007 AMS Spring Southeastern Section Meeting, Davidson, NC.

Where Do Power Laws Come From? *Jan. 2007*
Workshop on Complex Networks and their Applications, Atlanta, GA.

Random Linear Extensions of Grids *Dec. 2006*
Georgia Tech Combinatorics Seminar, Atlanta, GA.

Random Linear Extensions of Grids *Nov. 2006*
2006 AMS Fall Southeastern Sectional Meeting, Fayetteville, AR.

Collinear Triple Hypergraphs and the Finite Plane Kakeya Problem *Oct. 2006*
USC Number Theory Seminar, Columbia, SC.

Random Linear Extensions of Grids *Sep. 2006*
USC Combinatorics Seminar, Columbia, SC.

Collinear Points in Permutations and the Finite Plane Kakeya Problem *Jul. 2006*
UCSD Combinatorics Seminar, San Diego, CA.

Random Linear Extensions of Grids *Jun. 2006*
UCSD Combinatorics Seminar, San Diego, CA.

Foundations of Quasirandomness *Apr. 2006*
DIMACS/DIMATIA/Renyi Combinatorial Challenges Meeting, Piscataway, NJ.

Deterministic Random Walks on the Integers *Apr. 2006*
Joel Spencer's 60th Birthday Conference, Piscataway, NJ.

Deterministic Random Walks on the Integers *Mar. 2006*
Mittagsseminar, ETH-Zürich.

Deterministic Random Walks *Jan. 2006*
ANALCO '06, Miami, FL.

Missing Induced Subgraphs *Oct. 2005*

- Mittagsseminar, ETH-Zürich.
- What Keeps Me Up At Night** *Oct. 2005*
Mittagsseminar, ETH-Zürich.
- Inverting Power Series Mod 2** *May 2005*
Combinatorial and Additive Number Theory 2005, New York, NY.
- A Permutation Regularity Lemma** *Apr. 2005*
AMS 2005 Spring Eastern Section Meeting, Newark, DE.
- Erdős-Hajnal Sets and Semigroup Decompositions** *Mar. 2005*
Learn & Workshop: Random Graphs and Probabilistic Methods, Berlin, Germany.
- Quasirandom Permutations** *Feb. 2005*
DOCCOURSE: Modern Ramsey Theory, Prague, Czech Republic.
- Cycles for Other Shapes of Sliding Window** *Dec. 2004*
Courant Institute Geometry Seminar, New York, NY.
- Erdős-Hajnal Sets and Semigroup Decompositions** *Nov. 2004*
Princeton Combinatorics Seminar, Princeton, NJ.
- Erdős-Hajnal Sets and Semigroup Decompositions** *Nov. 2004*
Courant Institute Geometry Seminar, New York, NY.
- Erdős-Hajnal Sets and Semigroup Decompositions** *Oct. 2004*
DIMACS/DIMATIA/Rényi Working Group on Extremal Combinatorics II, Piscataway, NJ.
- Generalized de Bruijn Cycles** *Sep. 2004*
CUNY Combinatorics Seminar, New York, NY.
- A Permutation Regularity Lemma** *Jun. 2004*
SIAM Conference on Discrete Mathematics, Nashville, TN.
- A Permutation Regularity Lemma** *Jun. 2004*
NSF/CBMS Regional Research Conference in Mathematical Sciences on The Combinatorics of Large Sparse Graphs, San Marcos, CA.
- Simulating a Random Walk with Constant Error** *Apr. 2004*
CombinaTexas, Texas A&M, College Station, TX.
- Quasirandom Permutations** *Mar. 2004*
Courant Institute Probability and Mathematics Physics Seminar, New York, NY.
- Partial Quotients Bounded in Average** *Dec. 2003*
2003 West Coast Number Theory Conference, Monterey, CA.

- Quasirandom Permutations** *Nov. 2003*
University of Washington, Seattle, WA.
- Quasirandomness and Fourier Coefficients** *Nov. 2003*
Texas A&M, College Station, TX.
- A Generalization of Zaremba's Conjecture** *Nov. 2003*
Texas A&M, College Station, TX.
- De Bruijn Covering Codes** *Nov. 2003*
Texas A&M, College Station, TX.
- Quasirandomness and Continued Fractions** *Nov. 2003*
Integers 2003 Conference, Carrollton, GA.
- Quasirandom Permutations** *Oct. 2003*
Microsoft Research, Redmond, WA.
- Quasirandom Permutations** *Jun. 2003*
Thesis Defense, UCSD, San Diego, CA.
- Quasirandom Permutations** *Feb. 2003*
Graph Theory Seminar, Georgia Tech, Atlanta, GA.
- Abstract Line Configurations and the Milnor-Thom Theorem** *Oct. 2002*
Combinatorics Seminar, UCSD, San Diego, CA.
- Forbidden Subgraphs and Large Discrepancy** *Aug. 2002*
SIAM Conference on Discrete Mathematics, San Diego, CA.
- Asymmetric Covering Codes** *Aug. 2002*
SIAM Conference on Discrete Mathematics, San Diego, CA.
- Quasirandom Permutations** *Jan. 2002*
AMS Joint Mathematics Meetings (# 973), San Diego, CA.
- 4-cycle-free Graphs and Homogeneous Subsets** *Apr. 2002*
Combinatorics Seminar, UCSD, San Diego, CA.
- Directed Covering Codes - An Update** *Jan. 2002*
Combinatorics Seminar, UCSD, San Diego, CA.
- The Theory of Quasirandom Permutations** *Oct. 2001*
Combinatorics Seminar, UCSD, San Diego, CA.
- Matroids and Heart-Shaped Lattices** *Feb. 2001*
Combinatorics Seminar, UCSD, San Diego, CA.

Constructing Small Sets Uniform in Arithmetic Progressions
Combinatorics Seminar, UCSD, San Diego, CA.

Apr. 2001

Flawed Subgraphs and Primitive Partitions

Mar. 1995

26th Annual Combinatorics, Graph Theory, and Computing, Florida Atlantic University,
Boca Raton, FL.

Research Advisement

1. PhD

- (a) Chair: Aaron Dutle (USC, Mathematics PhD Candidate), Mark Walters (USC, Mathematics PhD Recipient 2009)
- (b) Committee: Kamala Diefenthaler (USC, Mathematics PhD Candidate), Austin Mohr (USC, Mathematics PhD Candidate), Xing Peng (USC, Mathematics PhD Candidate), Andrew Vincent (USC, Mathematics PhD Candidate)

2. MS

- (a) Chair: Bonny Riemer (USC, Mathematics MS Recipient 2008), Bill Kay (USC, Mathematics MS Candidate)
- (b) Cochair: Brett Ermer (USC, Statistics MS Recipient 2008, joint with John Grego, USC Department of Statistics)
- (c) Committee: Charles Cavalier (USC, Mathematics MS Recipient 2009)

3. BS

- (a) Bill Kay (USC, BS Candidate), Andrew Mamroth (USC, BS Candidate), Andrew Petrarca (USC, BS Candidate), Chris Poirel (USC, BS Recipient)